Faraday, Melloni, Magnus, the two Roses, Mitscherlich, Regnault, and a host of others, is written in its pages, and a large proportion of the translations from foreign languages were the work of the editor alone. After fifty years of his unassuming labor, Poggendorff's friends united in contributing to a "Jubelband," or jubilee volume, in honor of the anniversary of his connection with the "Annalen;" and a goodly tome filled with original memoirs marked the beginning of the second half-century of his life-work. A short time before his death, Poggendorff sought to give the "Annalen" a still wider range of usefulness by the occasional publication of "Beiblätter," or supplements, containing brief abstracts of the work of foreign investigators. The first number of this supplement appeared only a few days before his death. It might well be thought that the superintendence of the "Annalen" would be work enough for one man. But Poggendorff found time for original researches in several branches of physics, chiefly in electricity and magnetism. We owe to him the invention of the method of measuring small angular variations by means of a plane-mirror telescope and scale, now in constant use. To chemistry he contributed the method of indirect analysis, which is frequently of great value. The list of his published papers embraces more than one hundred and thirty titles. In 1863, he published, in two large volumes, the well-known "Biographisch-literarisches Handwörterbuch zur Geschichte der exacten Wissenchaften," — the worthy forerunner of the noble work of the Royal Society, and in itself a monument of careful labor. In Berlin, Poggendorff was surrounded by a circle of warmly attached friends. He was himself the type of the German scientist. Of unusual discrimination and critical ability, — laborious, patient, untiring, — he worked in his own vocation for nearly sixty years "without haste and without rest." Personally, he was kindly, genial, and hospitable, perfectly free from ostentation, with the heartiest sympathy for the student of science, and the most cordial appreciation of the work of others. On the 24th of January last, in his eighty-first year, he died, leaving a name honored wherever science is honored, cherished and loved by all who knew the man.

KARL ERNST VON BAER.

Karl Ernst Von Baer was born the 29th Feb., 1792, at Piep, the estate of his father in Esthonia, and died at Dorpat, aged eighty-four. It was a long life devoted to intellectual work, and, though it included active periods of travel and exploration, its most memorable events belong to the laboratory and are to be found in the annals of scientific

research during two-thirds of a century. The opening and closing scenes of his life were closely connected; for at Dorpat, in the early days of the University (1810–14), he received his collegiate education and his doctor's diploma, and there he retired to devote the quiet decline of his old age to his favorite studies, interrupted only by his death, Nov. 28, 1876. Although he graduated as a physician, he left the university at twenty-one years of age with a strong bent for natural history, strengthened by the influence of the botanist, Professor Ledebour, and the physiologist, Burdach. But to the naturalist in those days, unless fortune had made him independent, no path was open except that of medicine. The study of disease, with its accompanying branches of comparative anatomy and physiology, was the indirect road to the study of nature. Yet the young Von Baer struggled manfully with his predilection, and on his way to Vienna where he went to acquire practical familiarity with his profession, though keen to observe every thing of interest, he himself tells us that he avoided collections, as he would have done "a consuming fire." At Vienna, he tried, by throwing himself with new ardor into his professional work, to forget his passion for natural history. To this object, however, his excursions in the neighborhood, on which he allowed himself to botanize and geologize a little, were by no means favorable. On one of these rambles, somewhere in the environs of Salzburg, he fell in with Martius, the botanist, and this chance meeting proved a turning point in his career. Martius told him to go and study with Döllinger at Würzburg, and gave him as an introduction a package of mosses to be delivered to him. One of the most pleasing passages in his autobiography is that in which he describes himself as coming full of hope into the presence of the professor; handing the package, and stating at the same time his desire to attend his course on comparative anatomy. "I do not lecture on comparative anatomy this term," answered Döllinger, in the quiet, slow manner peculiar to him, at the same time opening the package and examining the mosses. As the young man stood for a moment silent and bewildered in his disappointment, the professor looked up again and said, "Why lectures? Bring an animal and dissect it here, and then another." The difficulty was solved. The young student appeared the next morning with a case of instruments and a leech purchased at an apothecary's shop. From that time, his table was in the laboratory of Döllinger, who was not slow to recognize in his new pupil a naturalist of the first order. A true teacher, Döllinger was lavish of his intellectual capital, giving to his pupils with generous disregard of his own scientific rights, the results of his original and unpublished investigations. His unselfishness was appre-

ciated by his pupils, and by none more than Von Baer, who speaks of him as his "worthy, well beloved, deeply revered teacher." During his stay at Würzburg, Von Baer became intimate with Pander, then beginning, under the direction of Döllinger and with the assistance of Dalton, the great series of embryological investigations, in which Von Baer afterward took so prominent a part, and which has made the names of all three, Döllinger, Von Baer, and Pander, synonymous with the science of embryology. Pander's embryology of the chick first gave the clew to Kaspar Friedrich Wolff's descriptions, and the connection of Von Baer with Pander's researches led him to investigations long unnoticed, and barely appreciated even now in their full value and significance, though they have gained for him the title of the founder of modern embryology.

The doubts as to his future career were happily solved at the close of his two years' residence in Würzburg by a letter from Burdach his former professor in Dorpat, offering him a place as assistant in the newly founded anatomical department in the University of Königsberg. This he gladly accepted, and, after a winter spent in Berlin in preparation for his new office, we find him established in 1817 at Königsberg. He entered on his duties with energy and success, cheered by seeing his old professor among the regular attendants at his lectures. His knowledge of the lower animals was extensive; and, though compelled to give his time chiefly to human anatomy, he made a series of preparations intended as the basis of a small museum. In 1819, through the influence of his colleague, Schweigger, he was appointed professor of zoölogy, with an additional salary of 300 thalers, and the understanding that he was to build up a great museum for the University of Königsberg. With his prospects thus improved, he now married Fräulein von Meden, and felt himself bound by new ties to Königsberg, where he remained till 1829. It was a brilliant period in the life of the university when, beside Von Baer, its faculty could boast of men like Schweigger, Schubert, Jacobi, Bessel, Struve, Lobech and the older Hagen. On Schweigger's death, Von Baer was made regular professor of natural history and zoölogy, with a considerable increase of salary, virtually diminished, however, by the necessity of purchasing books for his department, which the university found itself too poor to supply. His professional duties, combining instruction to the medical and zoölogical students with the care of the museum, were now very onerous. With all his energy and devotion, the museum moved far too slowly for his zeal. Occasionally, he was cheered by donations or by collections contributed from distant lands; and he succeeded in enlisting the sym-

pathies of the minister of public instruction and of the professors of the university. But the very modest allowance he received from the university, spite of occasional aid from outside, forced upon him a discouraging economy in the administration of the museum.

In the midst of all these professional duties, he found time for his special studies in geology, anthropology, and anatomy, and continued his systematic observations in embryology. As early as 1818, he had laid the foundation of his great generalization on the distinct modes of development for the four great branches of the animal kingdom, and in 1826 he published, in Burdach's "Physiology," his embryology of the chick and frog. Chiefly attracted by the development of Vertebrates, he first showed the identity of the mammalian egg, including that of man, with the egg of fishes. These results first appeared in the memorable treatise entitled "De Ovi Mammalium et Hominis Genesi," in 1827. It was in advance of the time, and, with the exception of a sneering comment on the egg found by a great man in the ovary of a woman, was hardly mentioned in the annual scientific reports of the day. The light thrown upon this paper by the writings of a later set of embryologists, Rathke, Bischoff, and Kölliker, first made known the vast importance of the theory of embryonic layers announced by Von Baer. It was followed in 1828 by the first volume of his "Entwickelungsgeschichte;" but it was only in 1831 that Von Baer was rewarded by the French Academy with one of its prizes. The English were even slower to recognize his merit, and the first English translation of the most important biological work of the century, the "Entwickelungsgeschichte" appeared only in 1855.

In 1829, Von Baer was invited to take charge of the zoölogical department in the Academy of St. Petersburg. He had, however, a certain distrust of the position from the long-continued delay in the publication of the great work of Pallas. On this account, although they were inclined to grant all he asked, he decided to remain at Königsberg, making it a condition, however, that he should have certain facilities for his embryological investigations. He now devoted himself especially to his investigations on the special modes of development characterizing the principal types of the animal kingdom, the results of which were embodied in the second volume of his "Entwickelungsgeschichte." During the second period of his Königsberg life, the social and political circumstances became less favorable to his aims, and in 1832 he renewed his negotiations with St. Petersburg; this time with a different result, for in 1834 we find him established there. He now entered on a life of greater activity and variety than

any he had hitherto known. Under the auspices of the academy, he made a number of journeys first to Lapland and Nova Zembla, and later in the interests of the fisheries to the Volga, Lake Peipus, and the Caspian Sea. He published full reports of all these explorations, and remained a most active member of the Academy till 1862, when he was made an honorary member.

Von Baer was a strong believer in development, but an uncompromising opponent of Darwinism, one of his last papers being a protest against the assumed descent of Vertebrates from Ascidians. The breadth of his culture, his great learning, his native simplicity of character, are nowhere better shown than in the volumes of his collected addresses, more popular essays and lectures. While, however, he inclines to make knowledge accessible to all, he speaks with quiet contempt of the dilettante science, Phytogeny, — if we may so call it, — which threatens to drown all serious investigations under its fantastic theories.

A few men in every century leave the tide line of human knowledge higher than they found it. Von Baer was one of these. Less brilliant perhaps than Cuvier, he is equally identified with the theory of types; and the fame of Von Baer may even outrun that of his great contemporary, since to embryology rather than to any other science we may look for the elucidation of the prominent biological problems of the day.

Since the last Report, the Academy has received an accession of eighteen new members: three Fellows, A. Graham Bell, B. H. Nash, W. E. Story; seven Associate Fellows, William Ferrel, J. L. Diman, Thomas Hill, George Mary Searle, Henry Larcom Abbott, Nathaniel Holmes, Richard Saltonstall Greenough; eight Foreign Honorary Members, Ernst Curtius, F. A. A. Mignet, James Paget, Mark Pattison, H. C. Rawlinson, A. P. Stanley, Alfred Tennyson, Viollet-Le-Duc. On the other hand, by removal from the State or by resignation, the following Fellows have abandoned their membership: Francis Bowen, Edward C. Cabot, William Ferrel, George S. Hillard, Ira Remson, William E. Story. The list of the Academy corrected to June, 1877, is hereto added. It includes 181 Fellows, 96 Associate Fellows, and 72 Foreign Honorary Members.